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THE VALUE AND THE FALLACY OF STATISTICS IN THE OBSERVATION OF DISEASE.

A Boylston Prize Essay, by David W. Cheever, M.D.

> "Je sais que la vérité est dans les choses, et non dans mon esprit qui les juge ; et que moins je mets du mien dans les jugements qui j'en porte, plus je suis sur d'approcher de la vérité."—*Emile J. J. Rousseau.*

[Communicated for the Boston Medical and Surgical Journal.]

This saying of the sage of Geneva has been used as evidence for the value of statistics, but it contains, also, as it seems to us, the germ of their fallacy; since they tend, when carried too far, to separate reason from observation; to ignore the subjective, and to study only the objective phenomena of disease. They would lead the medical observer to overlook, with Rousseau, the fact that it is by his mind that he judges, and that the rectitude of his decision depends on his own mental acuteness.

To adopt a clumsy but expressive phrase of Carlyle: "The eye sees only that which it brings with it the power of seeing." Previous knowledge and particular training, as well as common sense, are necessary to the correct observation of any class of phenomena. Observation must always vary with the character of the observer. We are the standard by which we must judge of external nature. The true understanding of natural laws is never attained wholly from without, nor immediately from nature, but rather from our own conceptions and deductions. Our senses, of themselves, teach us nothing, but only furnish us with impressions from which to infer and by which to determine the actual state of things outside of ourselves. And these impressions must inevitably differ in each individual, in accordance with his own preconceived ideas of the nature or uses of the object he examines. The ancient Romans assembled as varied specimens of the Animal Kingdom in the great *vivaria* of the Flavian amphitheatre, as the Jardin des Plantes can number within its enclosures. And yet they derived from them, if any, but the rudest notions of their peculiarities, races, and modes of life; while the broader generalizations of natural history and comparative anatomy never once crossed their minds. Archimedes saw only in the convex lens an instrument to burn the enemy's fleet; but Torricelli, the revelation of a new world of microscopic nature.

Nor can numbers, any more than our senses, teach us anything by themselves. The mere observation of simultaneous or consecutive occurrences, however great the number of cases may be, can lead to no definite results which may not be fallacious. A causal connection must be otherwise established. By a neglect of this circumstance, observers have been betrayed into the most absurd conclusions. Some would regulate the periods of parturition by the changes of the moon, and make the births of our race coincide with the quarters of that satellite. Others, as Boudin, by computations, bring the motion of the earth about its axis and around the sun, into a certain relation with the weight and excretory processes of the human body, thus pretending to establish a tidal flow of our excretions, ruled over by remote planets: a supposition which might suggest to the astronomer that the next discovered member of the solar system be named Cloacina. It could be no more ridiculous for the stranger who passed the night in the steerage of an emigrant ship to ascribe the typhus, which he there contracted, to the vermin with which the bodies of the sick might be infested.

An adequate cause, one reasonable of itself, must correct the coincidences of simple experience; and the mere numeration of any series of events cannot establish any general principles without analysis, classification, comparison, and induction.

The term "statistics" is nearly equivalent to "political," or "social science"; and we prefer the use of the expression, "the numerical method," in medical *parlance*. This method has both a value and a fallacy. And our subject has been well stated in this respect, and wisely restricted to the *observation*, or natural history of disease. For it so happens that this is not only one of the most important branches of medical science, but one of the most difficult to define and accurately determine.

By the natural history of disease we mean the succession of phases which it exhibits when left to itself, uncomplicated by other morbid processes, and unmolested by active treatment. The wiser view of disease has gradually gained ground, that it is not a distinct entity, something extraneous to the usual processes of life, and inimical because foreign. But that disease is only a variation from health, a difference in the action of the normal functions of the body, yet only a modification of them. Hence the natural history of disease aims to exhibit all the morbid changes in the vital phenomena, whose sum constitutes sickness, or variation from health. We are led to believe, too, that diseases, in their course, have a natural rise, increase, intermittence, climax, decline and limit. The establishment of these facts; the self-limited nature of some diseases; the inherent tendency to recover in others, and the proportional mortality of diseases generally, when left to themselves, are of the first importance in determining the value of therapeutics.

Such knowledge is, from the nature of things, very difficult to acquire. The accumulated errors of the past, and the ever present obstacles of interest, prejudice and partiality, constantly impede our progress. It is by no means easy to find a proper field for such inquiry; and a true estimate of the powers of nature is interfered with through the officiousness of art. Most diseases are subjected to so active treatment, as must at once vitiate the result. The practitioner's own conscientious scruples against leaving any cases to the care of Nature alone, from the fear, magnified by his previous teaching, that he might be injuring his patients; the non-perception of the utility of the knowledge to be so acquired, and the dread of being exposed to the charge of malpractice, all operate against his obtaining a knowledge of the natural history of disease. Effects are ascribed to drugs which really flow from natural causes, and are but the usual succession of the morbid phenomena; sequences are taken for consequences, and all just conclusions confused.

From the want of this knowledge; from defective observation, rash generalizations, and hasty conclusions *à priori*, have arisen the thousand conflicting theories which have degraded Medicine from its true position as a science, and interfered with its advancement as a practical art. Soon after the decease of the great prototype of medical observers, Hippocrates, such sects as Dogmatics, Empirics, Methodists, Pneumatists and Eclectics, violated the principles which he laid down, and successively assumed the control of disease. Two of these, the Empirics and Eclectics, have survived the rest. Later, the Humorists and Solidists divided the medical world. Pharmacy next mounted the throne, and conducted a reign of indiscriminate drugging, in which the value of a prescription seemed measured by its length. Treatment oscillated between such extremes as the antimonial tolerance of Rasori and the bleeding *coup sur coup* of Bouillaud. Etiology, in the hands of the most opposite characters, was content to trace all maladies to a single cause; which *materies morbi* Broussais located in the alimentary canal, but Hahnemann upon the skin. Sydenham, Boërhaave and Hunter countenanced a return to the neglected rules of Hippocrates; and a tendency to more exactitude in observation, owing its inception mainly to the physical diagnoses of Laennec, culminated in the numerical method of Louis.

The unfortunate student of medicine has therefore ever been placed between the horns of this dilemma; either to try to reconcile these conflicting theories, or to mount the favorite hobby of the most enterprising spirit of his times. Not only has he had to pursue subjects of study, in themselves dry from their apparent want of connection, but he has, more than all else, been crushed by the multitude of isolated facts, simultaneously presented to his mind and memory, for mastery and retention.

How tempting, then, must the supposed certainty, the easy generalization and the all-embracing tabulations of the numerical method, have seemed to him! A way appears at last to have been opened out of his difficulties, and he, perhaps too eagerly, follows the most promising path.

Although Louis first applied the numerical method, in its strict sense, to the observation of disease, yet the numbering of cases is as old as Hippocrates, and it was used by every practitioner who *counted* the facts of his experience, since that time. Capt. John Graunt, of London, has the honor of being the first writer who ever directed the attention of the world to the comparative births and deaths of different cities, years, seasons and sexes, and to the comparative mortality of disease. This he did in a work published in London in 1662. He had much genius for observation, and was really the creator of the new science of statistics. But the name owes its origin to Achenwal, of Göttingen, who published a work in 1749, in which the term *scientia statistica* occurs for the first time. The use of numbers as a means of comparison, in this work, led to the strange mistake of regarding their employment as a new method. It is more particularly during the present century that an attempt has been made by numbers to give to many subjects the exactness of the physical sciences, and to compensate for the want of demonstration by averages, and the balance of probabilities. Statistics, says Mr. Buckle, although a recent science, have already done more to advance the cause of human knowledge, than all other methods of investigation put together. Quetelet stands, perhaps, at the head of modern statisticians. The wideness and variety of the application of statistics is only equalled by the varying degree of certainty which attaches to their results. Births and deaths, marriages and morals, accidents and crimes, are all averaged and tabulated, year by year. Diseases and causes of death; epidemics, hygienic and local surroundings; trades, professions and crops, are equally subjected to numerical analysis. And from this the curious fact of the average uniformity of all events results. Thus, male births are ever in excess of female in the proportion of about 21 to 20; marriages depend on crops and prosperity; disease favors certain districts in proportion to their hygienic state; fecundity succeeds epidemics; accidents do not exist, but the same yearly average of casualties and crimes prevails approximately at all times. So that one can always predict, with much approach to certainty, how many persons will steal, or murder, or commit suicide, and even by what modes, or weapons, in any given period of time. Some have even carried this so far as to assert that the same number of misdirected letters, in the average, pass through the London post office every year; thus proving that not even occasional absence of mind is purely the result of chance.

It is obvious that very different degrees of certainty must prevail in the various kinds of statistics. Thus, commercial averages of imports or exports; financial statistics; or those of births and deaths, or of the crops—must be approximately more accurate, than those which relate to hygiene, to epidemics, or to casualties. And this, because the data in the former cases are few, simple and ascertainable; but in the latter, many, complicated and obscure. And here we shall find one of the cardinal distinctions to be drawn between ordinary statistics and the numerical method as applied to disease, as well as one of the many fallacies of the latter.

We fear that the mistake exists in the minds of some, of confounding together the laws and results of Physical signs with those of the Numerical method. It is true that the application of both began, so to speak, in the same country, and that they are nearly coeval; we are the more apt, therefore, to confound them, though the distinction between them is really wide, and should be always borne in mind.

Both these methods claim great accuracy; both also are apt to be carried too far. The one to the neglect of general, rational symptoms; the other to the tabulation of incomparable facts, and the drawing of illogical conclusions from too few, or too obscure *data.*

Man is incapable of observing all the phenomena of any event, but this is necessary to a perfect view of it. It is precisely the younger observers, the advocates of exact investigation, who think they see everything, and that they are the first to observe correctly.

Yet there is much practical wisdom acquired in life, on which men are obliged to depend, and which was never obtained by a formal, or mechanical process. Thus, a knowledge of human nature is not learned by counting, but by reasoning; by induction, and not by numeration. And statistics, like physical signs, when pushed to excess, may destroy that readiness and practical tact, which is of the most value in the treatment of urgent cases. Should one wait to tabulate and compare the symptoms with the mass of statistics previously acquired, the individual case would probably die, while waiting for relief. And it very unfortunately happens that the most sudden diseases have not the best established therapeutical laws. In surgery, no one would hesitate to compress a bleeding vessel; but in medicine, room is always left for a balance of probabilities; and the statistician would have to enforce a fatal delay before he could decide from numbers to bleed in apoplexy, or to vomit in croup.

While therefore mere observation and numbers, by themselves, are equally inadequate to unfold to us that most important of subjects, the natural history of disease, some further method must be sought for, than pure and naked experience. For all that we know by experience, or that which we express by an empirical law, is only a simple fact that certain effects and influences occur together, without our being able to point out their mutual dependence. And as there are no such things as accidents, or exceptions to natural laws, so in the living body, as elsewhere, no effects can occur otherwise than as consequences of fixed causes. They seem accidental and exceptional only because they are unexpected, and their antecedents unknown. Therefore, although the causal connection of events and phenomena is in our science peculiarly hard to trace, it is still the most legitimate object of investigation.

Analysis, followed by synthesis, are the two auxiliary methods in our search for causal connections. Analysis must precede synthesis. We must follow up the stream of events to their tributaries and source. We must break up and search the groups of similar and related individual facts, and then apply their laws to aggregates. By a natural impulse we follow analysis by an attempt at generalization. And here experience, fallacious though it be, must confirm our conclusions, or they are valueless. It is equally necessary to correct generalization, that we should discover resemblances, and demonstrate an agreement in essential points, among the phenomena, or relationships which we are seeking to bring under the control of a single law. Thus we should fail to explain the different agencies of chlorine on colors and on odors, did we not know its affinity for hydrogen, which operates in either case.

Yet, without generalization, our experience is but a chaos of empirical facts. And it is in the science of medicine that this difficulty of separating single phenomena from the magic circle of the whole, or of judging of their complexities in aggregates, or of generalizing widely and wisely by real resemblances, essential agreements, and well-known effective causes, is the greatest obstacle to real advancement.

We venture to say that there is but one other science, that of meteorology, comparable to medicine in uncertainty, and in the number and variability of unknown influences, which control its results. Who is a true prophet of the weather, or of disease?

For example, what a variety of influences affect a single organ, the eye. The laws of vitality, the rules of optics, the unknown chemical changes which photograph on the retina the image of the object seen; and finally the equally unknown connection of sense and nerve, brain and perception, all coincide in the government, the regulation and the result of vision. All its lenses, curtains and tunics are endowed with life; all are nourished by constant changes, and all are connected with the machinery of the whole organism. The cornea transmits, the iris cuts off the rays; the humors refract, the lens focalizes and renders achromatic, and the retina receives the soft impression of the sun's beams. Secretions moisten its exposed surfaces, and soft ciliæ free it from dust.

Muscular agencies move it in combined action; habit, mental influence, or some unknown law, regulate the harmony of the perceptions of both eyes, and replace the inverted image which the upright object makes, into its proper position in the sense itself.

"The structure of the human frame as much surpasses the most skilful work of man's hands, as its functions do the play of his most ingenious mechanism, and its products the results of his most refined chemistry. That which he knows, bears no proportion to that of which he is entirely ignorant, and what he sees, he sees but darkly. He seeks for causes, but they elude his search; the vital principle, which contains the solution of his difficulties, baffles him at every turn; he strives, as it were, to seize it by force, but the violence which he uses defeats itself, and the tortured body dies that it may preserve the secret of its life. Such, and so inscrutable is the body in health; disease surrounds it with new mysteries. Its structure passes through strange transformations; its functions undergo wonderful changes; a new chemistry presides over its secretions, and new principles seem to pervade its every part. Exposed from without to a thousand varying influences; subject within to innumerable changes; governed by a subtle principle which pervades every part, but seems to have no single centre of action; the tenement and instrument of a mind which it both obeys and governs—the human body forms, beyond all comparison, the most difficult, the most complicated study which offers itself to our choice. Our knowledge of such a structure must ever be imperfect, even if we confine our inquiries to a single, human being, or if every human being were the counterpart of every other, and external influences produced the same effects on all. But each human body differs from every other in outward form, in inward structure; in health, in disease; in the degree of influence of external things upon it; in the effects of food and remedies."

What wonder, then, that the careful medical logician should lay down as general laws: First, that, "In the living body, the same event or effect may occur in very different manners, under varying and dissimilar circumstances:" a fact which greatly complicates the investigation of casual connections. And, Second (because of the very varied influences in the development of vital phenomena), that, "In the living body no occurrence or effect ever takes place with perfect constancy and certainty, and always in the same manner; and that we cannot, for this reason, with perfect certainty, predict or expect any occurrence or effect whatever."

From these insuperable obstacles medical science has conducted its inquiries through two distinct stages, and is only partially within the borders of the third. These stages, according to M. Compte *(Philosophie Positive)* are, First, fiction and faith; Second, speculation; and Third, positive science. Anatomy, physiology, surgery, and morbid anatomy are either firmly established in, or have already entered upon the third stage. But the natural history of disease has long lingered in the first two eras, and is slowly emerging from them; while therapeutics, worst of all, remains, but for a more or less fallacious empiricism, as firmly rooted in fiction, faith and speculation as ever.

Medical science has always been in advance of medical art; and the progress of the latter does not correspond to the discoveries of the former. The power of healing is much inferior to the capacity of knowing; the treatment, to the diagnosis of disease. All the obstacles which arise to impede our progress in the inquiry into the causes, or the natural history of disease, assume a tenfold greater magnitude when we attempt to investigate their treatment. So, likewise, the objections to, and fallacies of the numerical method vary with the subjects for which it is consulted. Statistics of etiology and structural lesion are more reliable than those of pathology; and all of these, *à fortiori*, than those of therapeutics.

The question naturally arises whether the difficulty in medical investigations is inherent in the subject itself, or is due to faulty observations. Both causes probably concur in producing it. If the complexity and uncertainty of vital phenomena prevent a clear and comprehensive view of their relationships and laws, no less do the preconceived opinions and inaccurate modes of study of the observer stand in the way of the attainment of the truth. The former of these applies with more force to the medical science, than to the medical art; to a collection of principles, than to their practical application.

Originally a mere art, medicine took the form of a science when men began to collect, arrange and analyze individual instances, and to express what was common to them all in the form of propositions. The art which preceded the science differed greatly from the art which sprang from the science. The one was mere empiricism; the other, practical science. The art of medicine, as it now exists, is the offspring of science; and we can no longer regard individual facts in any other light than as suggestions to new inquiries, hints for practice, and solitary materials for the formation of theories. So, true observation is the union of thought and perception, which analyzes, arranges and classifies the facts collected. A simple employment of the senses is not observation; nor does the exercise of them constitute experience. In this sense, therefore, the science of medicine cannot be said to be wholly empirical.

To be continued.]

CASE OF SUPPRESSED MENSTRUATION.

[Communicated for the Boston Medical and Surgical Journal.]

MESSRS. EDITORS,—If you think the following case worthy of insertion in your JOURNAL, it is at your disposal.

Mrs. F., aged 25, of medium height and good figure, native of Scotland, married about three years, no children, called at office Oct. 20th, 1859, for the relief of suppression of menses, she not having "seen anything" for the twelve months previous; she had been taking medicine most of the time, without any relief. Upon examination, I could discover no signs of pregnancy, neither by touching nor by auscultation. She complains of no pain or uneasiness in any portion of the body; the only indication of a disordered condition of the system is an unusual paleness of the face. She has a good appetite, and performs her household duties without assistance. Since I first saw her, I have prescribed at various times, tonics, emmenagogues; also depletion, with foot and hip-baths, but without any relief. There is but little, if any enlargement of the abdomen, with no change in the breasts, the possibility of the existence of pregnancy, of tumor or ascites, being thereby precluded. I find, by reference to my notes, that, Dec. 20, I introduced a bougie into the womb, and on that evening there was hæmorrhage, but it ceased before morning, and there has been no flow since. I have introduced the bougie two or three times since, but without accomplishing anything. Previous to the suppression, she had two miscarriages, both accidental—the last through fright, which may also have been the cause of the suppression.

I present this case as a peculiar one, taking all the circumstances into consideration—the natural size of the abdomen, the normal condition of the breasts, and the comparatively perfect health of the individual. CHAS. H. LOTHROP, M.D.

Lyons, Iowa.

Selections from Medical Journals.

THE HOT SPRINGS OF ARKANSAS.—Of the Hot Springs, there are some fifty-four distinctly recognizable, besides a considerable number in the bed of the creek. With one exception, their temperature ranges from 120° to 148° of F., and their composition is nearly the same. The exception is a warm spring (temperature 100°) discovered a year ago on the bank of the creek beneath the others. It has a strong odor and taste of sulphur, and is believed to have considerable virtues.

The quantity of water discharged by the various hot springs is estimated at 350 gallons per minute (one spring affording 60 gallons), or, say about 500,000 *gallons per diem.*

The analysis of the water is as follows (by Prof. Owen, State Geologist, Arkansas):

1½ (one and a half) gallons of water contain—

Of silica, with sulphate of lime	1.04	grains.
Carb. of lime, 1.68, and bi-carb. of lime	2.04	"
Carbonate of magnesia	0.326	"
Bi-carb of magnesia	0.05	"
Sulph. of Lime, dissolved in water	0.35	"
Chloride of potassium	0.05	"
Chloride of sodium	2.18	"
Oxide of iron, with a little alumina	0.133	"
Dry powder (insol.)	1.16	"

The average attendance of visitors this spring and summer has been about four hundred, chiefly of persons afflicted with rheumatism, neuralgia, paralysis, dyspepsia, mercurial affections and syphilis. Rheumatism is the most frequent of these.

The baths are taken according to the custom of the place, without immediate medical supervision. Small wooden bath-houses are fitted over the creek, and close to the precipitous edge of the hill. Wooden reservoirs retain the water, which they receive through wooden troughs, until it is sufficiently cooled to be borne: it is then dropped in a stream of about an inch in diameter, from a height of nine or ten feet, upon the affected part, or the body generally (the time, according to the patient's power of endurance), and is received into a large wooden tub used for the plunge bath. A small chamber adjoining receives the steam from the constant flow of water, through wooden strips on which he stands, and drinking copious draughts of "hot and hot" in the meanwhile, the patient endures the vapor for five or ten minutes without any apparatus for breathing of fresh air, an occasional protrusion of the nose at the door being necessary: after which, more drinking of "hot and hot," and to bed, to sweat profusely under blankets from half an hour to two. This, once or twice a day, and the frequent drinking fresh hot during the day, other medicines being laid aside. This is what custom prescribes.—A. J. WRIGHT, ESQ., in *New Orleans Medical and Surgical Journal.*

RETIREMENT OF M. RICORD FROM THE HOPITAL DU MIDI.—The medical profession will hear with regret of the definite retirement of M. Ricord from the post of Surgeon to the Hôpital du Midi. Philip Ricord is a native of America, and was born at Baltimore, on the 10th of December, 1800. Owing to the regulation now in force, which excludes from the exercise of hospital functions those surgeons who shall have attained the age of sixty, the term of service of the talented surgeon would naturally have expired at the end of the presnt year. M. Ricord has, therefore, probably deemed it a more dignified course to resign prior to the completion of the full period. For nearly thirty years this celebrated Professor has occupied the Clinical Chair of the special branch of Surgery to which the Hôpital du Midi is exclusively devoted. The materials with which M. Ricord has built up his colossal reputation have, for the most part, been gleaned from the wards of this establishment. The admiration he has won, the friendships he has secured, the fortune he has accumulated, are all, more or less, consequences of his connection with this hospital. It was not likely, therefore, with such associations crowding on the memories of the speaker and of his audience, that M. Ricord should be able to take leave of the field in which he had toiled so cheerfully and so indefatigably for the space of an entire generation, without a lively feeling of emotion and regret, touchingly expressed by himself, and as warmly sympathized in by his hearers. The scene of last Thursday, M. Ricord's farewell to his hospital career, was a complete ovation. For more than two hours a numerous audience of friends, pupils and admirers listened with deep interest and veneration to a most pathetic parting address. The speech of the talented surgeon embraced a masterly sketch of the many and valuable contributions—the fruits of a long life of well-directed industry—with which his labors have enriched the treasury of medical science. If any man at any moment of his life might be pardoned the indulgence of a little self-glorification, surely M. Ricord, on Thursday afternoon, was entitled to such a privilege. On this occasion, however, the modest and unassuming manner in which he alluded to his immense services charmed and delighted his hearers by its delicacy of feeling; and the deafening acclamations which succeeded his valedictory discourse bore ample testimony to the warm sympathy he enjoys among his professional brethren. The following are some of M. Ricord's more celebrated works:—"Mémoire sur l'Emploi du Spéculum dans les Maladies Vénériennes;" "Mémoire sur l'Inoculation Artificielle de le Vérole chez l'Homme;" "Mémoire sur la Blennorrhagie chez la Femme;" "Mémoire sur l'Emploi de l'Onguent Mercuriel dans le Traitement des Erysipèles;" "Réfutation de l'Opinion de Hufeland sur la Blennorrhagie;" "Mémoire sur le Chancre;" "Mémoire sur l'Epididymite;" "Traité Pratique des Maladies Vénériennes, et Recherches sur l'Inoculation appliquée à l'Etude de ces Maladies" (this, perhaps, is M. Ricord's principal work); "Du Sarcocèle Syphilitique, de l'Induration des Corps Caverneux, et d'une Altération semblable de la Coque Fibreuse de l'Œil;" "Différence entre la Blennorrhagie et le Chancre;" "Clinique Iconographique de l'Hôpital des Vénériens;" and the "Lettres sur la Syphilis," originally published in the *Union Médicale*, and now embodied in a volume.—*Special Correspondent of the London Lancet*, Oct. 6, 1860.

M. Cullerier has been appointed as M. Ricord's successor at the Hôpital du Midi.

STATISTICS OF LITHOTOMY.—From the establishment of the Norfolk and Norwich Hospital, in July, 1772, to the end of last year, being a period of eighty-seven years and a half, 863 cases of stone in the bladder were admitted within its walls, and the calculi removed by the following methods:

Lateral operations	803
Extracted by dilatation, (female)	41
Lithotrity	11
Median operation	8
	——863

Of the 863 cases, 698 resulted in recovery, and 105 terminated fatally, giving a proportion of 1 in 7·647. Of the 41 females, 39 were cured, two died, the proportion being 1 in 10·5. One case ended fatally after the performance of the median operation. Taking the whole number, the recoveries were 755; the deaths, 108; the proportion 1 in 7·99. The males numbered 822; the females 41, or 1 in 20.

Of late years the average of success has been high. From June, 1853, to December, 1859, a period of six years and a half, 69 patients were operated on; 4 died, the rest recovered; the proportion being 1 in 17·25. If 9 lithotrities and 3 females be omitted, there remain 57 on whom the lateral and median operations were performed, and as the deaths are 4, the result is 1 in 14·25.

It is a singular fact, that in two distinct periods during the existence of the institution, have forty cases of stone been operated on successfully without death. The first instance occurred to M. Martineau; the second happened in a succession of cases, as they occurred to the surgeons of the day, Messrs. Dalrymple, Crosse, and Norgate.

The number of calculi which have been removed by operation at this hospital, amounted to 982 specimens, which have been carefully collected, and preserved in the museum of the institution. They form the largest collection in the world of human urinary calculi, exclusively the produce of a single establishment, and are arranged in numerical and chronological order, with an inscription to each, distinguishing the name of the operator, the name and age of the patient, the weight of the calculus removed, the day and year of the operation, and the date of the patient's discharge as cured, or his death when the result was unfavorable. A section has also been made of every calculus when such was practicable. To this fine collection may be added 542 other specimens of calculi presented to the museum of the hospital by different surgeons. —*London Lancet.*

The "Elberfeld Gazette" states that in Prussia, in a population of 17,739,913 souls, there are 358 district physicians; 4,327 having their grades; 996 surgeons, first class, and 643 second class; 1,026 veterinary surgeons; 1,529 apothecaries; and 11,411 midwives.

Medical Reports from the Mass. General Hospital.

PREPARED BY ROBERT WARE, M.D.

TYPHOID FEVER. (Under the care of Dr. MINOT.)—T. Q., 19 years, single, a carpenter, of Irish birth, but resident of Boston, entered Aug. 26th, 1860. Patient answers questions readily, and appears rational. He states that his sickness began about three weeks since, with headache, pain in the back and limbs, vertigo, nausea, epistaxis, diarrhœa to the amount of thirteen dejections in one day within the past fortnight, and disturbed sleep. His health is usually good. He has had some delirium, but appears quiet now; skin hot and dry; tongue with yellowish coat in the centre, and with red edges; pulse 94; abdomen tympanitic, gurgling at iliac fossæ. R. Mist. febril., ʒi. every three hours. August 27th.—Patient had a very delirious night, getting out of bed and trying to get out of the window; answers a little incoherently; some headache; epistaxis this morning; tongue moist, with thin, yellow coat; pulse 100, weak and reduplicated; tenderness at iliac fossæ; no subsultus tendinum; one dejection, going to water-closet himself. Wine whey, Oss.; beef-tea, ad libitum.

Aug. 28th (12th day of disease [?].—The period of the disease cannot be ascertained with precision, but its course and the occurrence of rose spots on this day would indicate that he entered at about the end of the second week.) He has been much more quiet, and slept well; says no dejection, but is known to have gone once to the water-closet; pulse 92, soft; tongue moist, with thin coat; no sordes; answers questions readily, but appears rather more stupid; two or three rose spots on the abdomen; takes food well. 13th day—Mind pretty clear; reports several dejections in the night, but continued to go to the water-closet; pulse 96; a few more rose spots. 14th day—Quite a comfortable night, and is quiet this morning, though rather more uneasy talking; tongue nearly clean, moist; pulse 96; much viscid mucus in the mouth. Brandy, half an ounce every two hours. 15th day—Was very delirious yesterday afternoon and evening, getting out of bed, &c.; appears stupid, but answers well; went frequently to the water-closet, but result not known; pulse 108, soft and undulating. Took twelve ounces of brandy yesterday, and a pint of cracker and milk this morning. To have milk. 16th day—Had a "good supper" last night, and was quiet through the night; tongue tremulous; aspect better; some sordes. 17th day—Says much better; pulse 84; appetite very good; six dejections. Omit fever mixture. R. Mist. Cretæ, ℥ss.; tr. opii, gtt. vi. 18th day—no recurrence of diarrhœa; epistaxis last evening; a few more rose spots. To have broth.

From this date he rapidly improved. He sat up on the 20th day; was allowed potato on the 23d, and steak on the 24th days. He was discharged on the 30th day, Sept. 15th.

TYPHOID FEVER. (Dr. MINOT.)—Sarah H., 34 years, widow, a domestic, born in Maine, and resident of Medford, entered Sept. 10th, 1860. Patient is quite delirious, and can give no satisfactory account of herself. She states that she had an attack of chilliness, followed by pain in the head and limbs, about two weeks since, but kept at work till a week ago, when she was obliged to take to her bed; has had no epistaxis. R. Mist. febril., ʒi. every three hours; wine whey.

Sept. 11th (12th day of disease?).—Restless and delirious night, trying to get out of bed; complains of confused head, and is rather somnolent; pulse 84, very weak; respiration rather accelerated and sighing; some sordes on the teeth; tongue nearly clean, fissured, protruded slowly, and mouth sore; has had four dejections since yesterday; quite tender at the right iliac fossa, and a few rose spots on the abdomen. Solution of borax (ʒi. to Oi.) as wash for the mouth; tamarind water. 13th day—She had a comfortable night, with no delirium; answers questions slowly, and memory a little imperfect; tongue as yesterday; pulse 96; takes sufficient nourishment. 14th day—No delirium; pulse 96, soft; five dejections; has had a chill daily about noon time. Omit fever mixture. R. Mist. cretæ, ℥ss.; tr. opii, gtt. vi. after every three dejections. 15th day—Mind clear; diarrhœa diminished; respiration rapid; pulse 96. 16th day—No delirium; skin rather hot; tongue moist; pulse 96; respiration 48, and somewhat wheezing; occasional slight cough; no expectoration; some doubtful lack of resonance on percussion at the right base behind, where the respiratory murmur is quite feeble; sibilant rales, mixed with some fine crepitus, heard over both backs, especially on the left side. R. Wine whey, Oi. in twenty-four hours; may have broma. Gum water for drink. 17th day—Restless night, and complains of want of sleep; no delirium, but some laughing and talking; respiration as yesterday; creaking sounds heard over the chest, but no rales; expectoration of serous fluid, with a few small masses of tough mucus; five or six dejections. Resume fever mixture as before. R. Pulv. Dover., gr. xii. at night. Champagne, ℥ij. every three hours. 18th day—Has been quiet, and slept well; tongue clean; very little cough; abundant sibilant rales over both backs; half a dozen rose spots on the abdomen, and tenderness in the right iliac fossa; three dejections. 19th day—complains chiefly of pain in the back and in the soles of her feet, and of much debility; pulse 96; tongue moist; one dejection. Omit champagne; let her have broth. R. Ammon. carb., gr. vi. three times a day. 21st day—Mind clear; tongue clean; has very little cough; still slight crepitant rale at base of right back. Let her have boiled rice.

She improved pretty steadily, though slowly, after this date; she suffered chiefly from extreme debility and from pain in the back and limbs. Two ounces of sherry wine in twenty-four hours were substituted for the ammonia on the 22d day, and this was increased to four ounces on the 24th. She took baked potato on the 26th day, and sat up for an hour on the 29th, though still complaining of debility and costiveness. A pint of ale was substituted for the wine. On the 30th day she was allowed chicken, and sat up three hours, and on the 34th day was ordered two grains of quinine three times a day. 35th day—An erythematous eruption was noticed on the chest, and on the following day the whole surface of the trunk was covered with an eruption of fine purple points, slightly raised, and causing intense itching. A solution of borax (ʒi. to Oi.) was applied as a wash; the quinine was omitted, and sulphur and cream of tartar were given as a laxative, the bowels having been confined for two days. The itching ceased after the application of the wash, and on the following morning (37th day), the eruption had disappeared. She was able to sit up all day on the 40th day, and was allowed "house diet." The bowels continued to require laxative medicines, but she was discharged on the 44th day, Oct. 13th.

Typhoid Fever. (Dr. Minot.)—Ann C., 22 years, married, a domestic, born in Ireland and resident of Boston, entered Sept. 12th, 1860. Patient states that her health is usually good, and that she was well till Sept. 5th, when she was ailing and chilly through the day. She awoke with headache and pain in the back and limbs, which has continued since. The catamenia appeared on the 7th, with more pain and in larger quantity than ever before. She is subject to epistaxis, but has had none during present sickness. There has been considerable diarrhœa. She complains of headache, dizziness, thirst, disturbed sleep and want of appetite; pulse 96; no rose spots. R. Mist. febril., ʒi. every three hours. R. Mist. cretæ, ℥ss.; tinct. opii., gtt. vi. after every second dejection. Liquid farinaceous diet. Sept. 13th (9th day)—Slept pretty well, without delirium; no dejection; pulse 96; tongue dry, with a thin white coat; headache: gurgling at the right iliac fossa, but no tenderness. Omit medicines; continue diet. 10th day.—No delirium; mind clear: tongue dry; no dejection; a number of rose spots scattered over the abdomen; some pain at the epigastrium. May have lemonade. 11th day—No delirium; reports more comfortable; lying partly on the right side: two dejections; some sordes on the lips; tongue moist, with thin brownish coat. May have beef-tea. 12th day—No delirium; two dejections. Was allowed bread and tea.

She convalesced steadily and rapidly from this time. The nights were quiet; the bowels acted naturally; she was allowed potato on the 19th day, and chicken on the 21st, when she sat up most of the day. She was ordered two drachms of the tincture of bark three times a day on the 22d day, and was discharged well on the 27th day, Oct. 1st.

The cases of typhoid fever here reported include all the more important ones which occurred in the west wing of the Hospital during the autumn of 1860. They have been presented mostly in the words of the Hospital record and in some detail, as it was thought that in this way the course and sequence of symptoms, and the effects of medicine and diet, would be best shown. "It will be seen that the treatment was in the main extremely simple, and that a large proportion of the cases recovered. The character of the treatment and the result may be ascribed to the fact that the disease was uncommonly mild during the season, or at any rate, that a majority of the cases in these wards were mild. Some of the patients recovered perfectly, having taken scarcely any medicine at all. Most of them took from one to four drachms of the Hospital "fever mixture" (composed of equal parts of the solution of acetate of ammonia, sweet spirit of nitre, and chloric ether) every few hours, where a moderate diffusible stimulant seemed necessary. In prostration, brandy, champagne and carbonate of ammonia were freely given, though many of the sick took no wine or spirit whatever. In all cases, beef-tea, milk, or some other nourishment, was given at intervals of at least three hours, whenever the patient would take it.

"In the case of Thomas W. (page 421), although the patient was extremely nervous and desponding, the fatal result was unexpected, and was not explained by the autopsy. It is possible that a more liberal allowance of stimulants early in the disease might have had a beneficial effect. The fact that he had a murmur at the base of the heart, so strong that it was erroneously supposed to depend upon organic disease, indicates that the blood was probably in an impoverished condition."—M.

DYSPNŒA—DEATH—DISEASE OF THE HEART AND KIDNEYS. (Under the care of Dr. MINOT.)—Hiram F., 52 years, married, a mechanic, resident of Boston, but native of N. Hampshire, entered Oct. 13, 1860. Patient states his family is healthy, and is not subject to thoracic affections. For two years past he has noticed that he had some difficulty in mounting an ascent, or walking against the wind, and has been subject to attacks of pain, extending across the chest and down the left arm to the elbow. He was well as usual till about two months ago, when he supposes that he caught cold, and his respiration began to be labored, and inspiration was performed with a wheezing sound. The dyspnœa gradually increased, but he continued at work till two weeks since. He was up and about till within two days, but since then the dyspnœa has been so severe on any exertion as to confine him entirely. He is often obliged to rise in the night and go to the window; relief generally follows expectoration. Last night he had a paroxysm of unusual severity, seeming to threaten life. His appetite is still good. R. Naphthæ, ʒi.; syr. scill. et mucilag. acaciæ, aa ℥ ij.—ʒi. p. r. n. Let him inhale the fumes of stramonium and nitre paper.

Oct. 14. Patient is dressed, but has an attack of dyspnœa on the least exertion; occasional cough, with expectoration of small masses of thick yellowish mucus. There was no relief from the naphtha, but he slept after a dose of morphia given in the night; well marked arcus senilis; chest well formed and developed; respiration slow and labored; percussion rather dull just below the right clavicle; inspiration short, expiration much prolonged, loud sonorous and sibilant rales, chiefly with expiration, heard over the whole chest, with the exception of the left base behind, where is considerable inspiratory crepitus; impulse and sounds of heart are feeble, and the latter are not heard in the back; a faint but distinct systolic murmur is heard below the left pectoral muscle; pulse 112, almost imperceptible; urine scanty, acid, sp. gr. 1027, no albumen or casts of the tubuli. Let him have a hot mustard foot bath; if no relief, a hot infusion of strong coffee without milk or sugar; if no relief, R Antimon. tart., gr. 1-8, secundis horis till easy. Oct. 15th—A very severe paroxysm occurred in the night, lasting upwards of two hours. Assafœtida, morphia, hot gin, and ether by inhalation, were exhibited without relief. R. Sp. ether nitros, ʒii.; tinct. scill., gtt. x. every hour till four doses taken; hot foot bath; sinapism to the chest before and behind—to be cupped over the loins to four ounces. 16th—Relief followed the cupping, which was repeated in the evening on account of a return of the dyspnœa; expectorated in the night about one ounce of serum, with a few round yellow masses in it; pulse almost imperceptible. Omit medicine. R. Ammoniæ valerian, ʒi.; syr. zinzib. ℥i. m. ʒi. every two hours. 17th—Patient suffered extreme distress through yesterday, and in the evening venesection was performed, with immediate relief. He took one drachm of the fluid extract of hyoscyamus in divided doses, slept well even while lying down, and says now that he is very comfortable. Expiration is much prolonged and wheezing; tongue moist, with thick coat; surface and extremities cool; lips livid; feet and ankles œdematous; no pulse at the wrist. He failed rapidly during that day, and died at 3 A.M., Oct 18th.

Autopsy. Three pints of serum were found in the right pleural cavity, and two pints in the left: both lungs œdematous; general hypertrophy of the heart, especially of its left side, organ weighing fifteen and a half ounces; aortic valves faced and stiffened by a large quantity of cretaceous matter; the aortic orifice admitted the little finger to the second joint; mitral valve slightly thickened, but not enough to interfere with its function, and the orifice was free; the cortical substance of the kidneys was lighter colored than usual, and decidedly granular.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JANUARY 3, 1861.

Massachusetts Medical Benevolent Society.—At the last Annual Meeting of this association, it will be remembered that a committee was appointed to make suitable arrangements for a dinner, to be served at such time and place as they should select. This committee, with a promptness which cannot be too highly commended, made their report, substantially, on Saturday evening last, at Young's Hotel. Everything that good taste could suggest had been done on their part as well as on that of the landlord, Mr. Stevens, to render the entertainment worthy of the occasion, and it has rarely been our good fortune to be present at a more orderly and elegant repast. Between forty and fifty members of the Society sat down to dinner about six o'clock. Among those present, besides the President, Dr. Hayward, were the venerable Dr. Jackson, Drs. Bigelow, John Ware, Reynolds, Storer, Gould, and many other distinguished and prominent members of the profession of Boston and its vicinity. The Rev. E. E. Hale was also present and acted as chaplain. Dr. Hayward presided with his usual dignity and grace, and towards the close of the evening, on rising to speak, was warmly applauded; he made a few remarks in language most happily chosen, expressive of his thanks for the honor conferred on him by the Society; also alluding to the deep interest he had felt from the first in the object of its formation. As it was understood that no one should be called upon for a speech, it was some time before the example of the President was followed. Dr. Storer, in referring to the origin of the Society, made a well-timed allusion to the fact that it owed its existence to the suggestion of a member then present, and proposed his health, which was heartily responded to. Dr. Morland, to whom reference was made, replied briefly, returning thanks for the honor done him. Another pleasing incident of the occasion was the compliment paid to Dr. Jackson, whose health, on his retiring from the hall, was proposed by the President, and drunk by all standing.

It may not be out of place here to allude cursorily to the origin of this charitable association, which has now become of rapidly growing importance. In the autumn of 1856, the idea of an association for the aid of indigent and infirm or disabled practitioners was first suggested by Dr. Morland, then one of the editors of this JOURNAL, in a brief but well-written editorial. This led to the discussion of the subject by those most interested in the commencement of such a work, and it was decided that the matter should be brought before the Boston Medical Book Club, at its next annual meeting in December. This was accordingly done by Dr. Williams, who from the first had been one of the most active in favor of the project, and a committee of three was then appointed to consider the whole subject, and report thereon at a special meeting to be called for that purpose. In the mean time, correspondence was entered into with the secretaries of similar societies in England, who without exception most cheerfully afforded all the information asked, and expressed the warmest interest in the proposed plan, and everything was done to enable the committee to report understandingly.

In February, 1857, a meeting of the Club was called, at which their final report was submitted, which was decidedly favorable to the project. At this, and at a subsequent adjourned meeting, a constitution was framed, and a committee appointed to confer with the Councillors of the Massachusetts Medical Society, the result of which was the calling of a general meeting of the profession, for the purpose, if possible, of at once organizing a society. This was in March, 1857. The constitution, which had been previously framed with much care, was now adopted with but few, if any alterations, and the organization became complete by the choice of officers.

It is rare that a society of so general a character, and having such important interests, comes into being with so little to mark the event. The kindliness which the nature of the work naturally infused into the hearts of its founders seemed to leave little room for that spirit of contention so liable to be engendered by a popular discussion, and to end in noisy and ostentatious debate. If its subsequent progress has been correspondingly tranquil, it has been none the less sure, and such as to warrant the belief that, at no far distant period, the seed which was planted and nurtured with so much care, will begin to bear fruit, and that the founders of this noble charity may yet live to see the result of their efforts, whose influence will be felt to the latest generations.

PRESCRIPTIONS, PHYSICIANS AND DRUGGISTS. *Messrs. Editors,*—Two or three druggists in this city have adopted the plan of copying the prescriptions sent to their shops, and returning the originals to the purchaser. With the majority of the druggists it is the rule to put the prescriptions on file, and number the package with the corresponding number of the prescription. The writer would suggest, that the older practice is far better, and safer for all parties.

To begin with, patients generally do not know what the prescription is sent back for. To these, of course, it is of no use. If they have occasion to use it, a copy is as good for them as the original.

In the second place, a physician sometimes wishes to refer to his original writing, and this, months after the prescription was written. The chances are ninety-nine at least, out of a hundred, that he cannot find it.

Again, the original should be kept by the druggist for his own protection. Cases have occurred more than once, in this country, where a dispute concerning a compound has existed, and in which it became necessary to know whether the druggist read wrong, or the prescriber wrote wrong. It is certainly fair to infer, that one is as likely to be the case as the other. The prescription on file in one place, and the partially filled box or bottle in another, would give protection to the two equally. It would be a safeguard for both, if the physician should always write upon his prescription paper the directions for using the compound. Druggists have sometimes been unfairly blamed for asking how a medicine is to be used, thus seeming to doubt whether the medicine written for was intended by the prescriber. This would be proper in case an excessively or unusually large amount of a narcotic were written for. If it were also stated whether the patient were a child or not, the druggist would sometimes see that the physician in his haste perhaps had made a mistake, for the knowledge of which he would have occasion to thank the druggist who notified him.

Any member of the profession who will take the trouble to look over an apothecary's file, will see how often some physicians must be thankful to the druggist for not mistaking one medicine for another.

A little more freedom of intercourse between the two professions would improve the knowledge of both, and tend to raise the standard of our drug stores. The American College of Pharmacy is doing all that it can to improve future practitioners of pharmacy, and if we are willing to give them a helping hand, the next generation of druggists may take a position, as chemists and pharmaceutists, which they do not all enjoy now.

We need a class of apothecaries, every one of whom can analyze the drugs which he buys, and who can judge of opium, aloes and rhubarb, as well as he can of cigars and fancy goods. Every facility for intercourse between physicians and themselves will encourage them to educate their apprentices.

C. E. B.

THE CASE OF SIR BENJAMIN BRODIE.—The medical profession, both in England and abroad, have recently evinced the liveliest interest in the distressing case of this distinguished gentleman, who at the age of 84, has undergone the operation of iridectomy for impaired vision in both eyes. About last December his sight began to fail, and on the 12th of July of this year, Mr. Bowman removed a portion of each iris for supposed glaucoma. There seems to have been an error in the diagnosis, Mr. Hodgson and Mr. White Cooper regarding the disease as senile cataract, and did not recommend the operation of iridectomy. The left eye is very little improved, if at all, and in the right vision is completely lost; but as there is now a cataract very evident in the latter, sight may be restored by extraction of the lens, provided the eye is not glaucomatous. The high position of the unfortunate and much respected sufferer renders the case especially interesting in relation to the operation of iridectomy, one of equivocal value, which is now being so extensively tried.—*N. A. Med.-Chir. Review.*

FALSE MEMBRANE IN DIPHTHERIA.—In several good cases, Dr. Beale could find no traces of fungi. In one specimen in which vegetable organisms were discovered, they were proved to be of accidental presence. The membrane seemed to be delicately fibrilated in its entire thickness, and contained a number of small faintly granular corpuscles. In some cases the membrane was composed of cells, closely agreed in character with pus-corpuscles. Several interesting cases illustrating the general and minute structure of the diphtheric membrane may be seen in the last volume (No. X.) of the "Transactions of the Pathological Society," pp. 311–334.

Professor Vella, guided by the experimental researches of M. Claude Bernard, some time since completed a course of investigations in order to test the alleged antagonistic powers of woorara and strychnine, and his investigations considerably strengthened the belief, already prevalent, that the two agents stand in relation to one another as poison and antidote. It would now appear that M. Thiercelin has advanced a step further, and, struck by the counteraction of the artificially produced convulsions by woorara, has been led to administer the drug in the treatment of several convulsive diseases, more especially epilepsy, and with most marked effect.—*London Lancet.*

VITAL STATISTICS OF BOSTON.

For the Week ending Saturday, December 29th, 1860.

DEATHS.

	Males.	*Females*	*Total*
Deaths during the week, ...	36	29	65
Average Mortality of the corresponding weeks of the ten years, 1850–1860,	39.4	37.1	76.5
Average corrected to increased population, ...	..	..	83.9
Deaths of persons above 90, ...	..	..	..

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumonia.	Measles.	Smallpox.	Dysentery.	Typhoid Fever.
10	2	2	8	0	0	0	2

METEOROLOGY.

From Observations taken at the Observatory of Harvard College.

Mean height of Barometer, . . .	30.136	Highest point of Thermometer, . . .	38°
Highest point of Barometer, . .	30.632	Lowest point of Thermometer, . . .	13°
Lowest point of Barometer, . . .	29.500	General direction of Wind,	N., N. E & N. W.
Mean Temperature, ...	27°.50	Whole am't of Rain in the week . .	1.805

From Observations taken by Dr. Ignatius Langer, at Davenport, Scott Co., Iowa. ***Latitude,*** **41.31** ***North. Longitude,*** **13.41** ***West. Height above the Sea,*** **585.**

		Barometer.						Thermometer.				Snow.		Mean Amount of Cloud. 0 to 10.
		7 A.M.	2 P.M.	9 P.M.	Mean Height,	Highest Point,	Lowest Point,	7 AM	2 PM	9 PM	Mean Height,	Time	Measure.	
Monday,	Dec. 17,	29.68	29.60	29.61	29.36.	29.68.	28.91.	25	35	34	17.5.	17 hours, 00 m.	1.12.	7
Tuesday,	" 18,	29.48	29 31	29.12				33	37	38				
Wednesday,	" 19,	28.91	28.95	29.7				38	36	34				
Thursday,	" 20,	29.21	29.22	29.21				16	13	19				
Friday,	" 21,	29.16	29.22	29.34				13	14	0				
Saturday,	" 22,	29.45	29.50	29 54				12	4	4				
Sunday,	" 23,	29.60	29.66	29.64				17	6	5				

Books Received.—Report of the City Registrar, of the Births, Marriages, and Deaths, in the city of Boston, for the year 1859.

Married,—In Holliston, December 24th, Dr. D. Wayland Jones, of Medfield, to Miss Joseph D., youngest daughter of Elias Bullard, Esq., of Holliston.

Died,—At Attleboro', Dec. 17th, Ephraim Knapp, M.D., aged 80.

Deaths in Boston for the weeking Saturday noon, December 29th, 1860, 65. Males, 36—Females, 29.—Accidents, 2—apoplexy, 1—disease of the bladder, 1—congestion of the brain, 2—disease of the brain, 3—bronchitis, 3—burns, 1—cancer, 1—consumption, 10—convulsions, 2—croup, 2—debility, 1—diarrhœa, 1—diphtheria, 1—puerperal disease, 2—scarlet fever, 2—typhoid fever, 2—disease of the heart, 2—intemperance, 2—disease of the kidneys, 1—congestion of the lungs, 2—inflammation of the lungs, 8—peritonitis, 2—premature birth, 3—suicide, 2—unknown, 6.

Under 5 years of age, 19—between 5 and 20 years, 5—between 20 and 40 years, 16—between 40 and 60 years, 17—above 60 years, 8. Born in the United States, 43—Ireland, 17—other places, 5.